UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
OREGON OPERATIONS OFFICE
811 S.W. 6th Avenue
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July 6, 2006

Mr. Jim McKenna
Port of Portland & Co-Chairman, Lower Willamette Group
121 NW Everett
Portland, Oregon 97209

Mr. Robert Wyatt
Northwest Natural & Co-Chairman, Lower Willamette Group
220 Northwest Second Avenue
Portland, Oregon 97209

Re: Portland Harbor Superfund Site; Administrative Order on Consent for Remedial Investigation and Feasibility Study; Docket No. CERCLA-10-2001-0240. Ecological Risk Assessment Interpretive Report: Estimating Risks To Benthic Organisms Using Predictive Models Based On Sediment Toxicity Tests

Dear Messrs. Wyatt and McKenna:

EPA has completed its review of the Ecological Risk Assessment Interpretive Report: Estimating Risks To Benthic Organisms Using Predictive Models Based On Sediment Toxicity Tests (Benthic Toxicity Interpretive Report). The document, prepared by Windward Environmental LLC for the Lower Willamette Group (LWG), is dated March 17, 2006. EPA comments are attached.

~~The two methods pursued by the LWG (floating percentile method and logistic regression method) were reasonably successful at developing a predictive relationship between sediment chemistry and toxicity. The two predictive modeling approaches were in agreement approximately 75% of the time and are useful for focusing in on areas where sediment contamination is likely to pose a risk to the benthic community. As a result, EPA recommends the following approach for moving forward with application of predictive models to estimate sediment toxicity at the Portland Harbor site.~~

The recommended Sediment Quality Values proposed by LWG were based on the floating percentile method based on 3 of the 4 toxicity test endpoints (Hyalella growth was not included). NOAA developed alternative logistic regression models, using a larger freshwater database for the *Hyalella* 28-day growth and survival endpoint and calibrated these models to the Level 2 Effect Level in the Portland Harbor data. Both approaches were reasonably successful at developing a predictive relationship between sediment chemistry and toxicity. The two predictive modeling approaches were in agreement approximately 75% of the time and are useful for focusing in on areas where sediment contamination is likely to pose a risk to the benthic community. As a result, EPA recommends the following approach for moving forward with

application of predictive models to estimate sediment toxicity at the Portland Harbor site.

EPA comments on the predictive models should be incorporated into the next iteration of the Benthic Toxicity Interpretive Report to be presented in the baseline ecological risk assessment and remedial investigation report. For the Round 2 Report, EPA recommends incorporating the results of the predictive model as presented with the following modifications:

1. NOAA developed alternative logistic regression models, using a larger freshwater database for the *Hyalella* 28-day growth and survival endpoint and calibrated these models to the Level 2 Effect Level in the Portland Harbor data. EPA believes that this alternative set of logistic regression models should be applied by the LWG to the Portland Harbor data set to improved the predictive ability of these tools.
2. The approach recommended by the LWG should be applied in conjunction with the alternative logistic regression models developed by NOAA as complimentary lines of evidence. Areas where both models predict risk or do not predict risk should be identified as such. Areas where the models are not in agreement should be identified as areas of indeterminate risk. Areas of indeterminate risk should be refined based on other lines of evidence used to evaluate risk to the benthic community.
3. The approach recommended by the LWG includes a proposed sediment quality values (SQV) of 1,270 mg/kg for total PAHs. This concentration is more than 50 times the concentration of the consensus based probable effects concentration (PEC) of 22 23 mg/kg developed by MacDonald and Ingersoll. As a result this value should not be applied to the data set. The LWG recommended floating percentile method should rely on the SQV developed for diesel range hydrocarbons as a surrogate for total PAHs.

The Round 2 Report should use the floating percentile methodology and the refined logistic regression methodology to identify areas of potential concern based on risks to the benthic community. Refinements to the predictive approach outlined in the attached comments should be used in conjunction with the results of the Round 2 report to identify additional data needs that will improve the models' ability to predict risks to the benthic community. These data gaps should be filled as part of the Round 3B sampling effort to be completed in 2007.

Please contact Chip Humphrey at (503) 326-2678 or Eric Blischke (503) 326-4006 if you have any questions. All legal inquiries should be directed to Lori Cora at (206) 553-1115.

Sincerely,

Chip Humphrey
Eric Blischke
Remedial Project Managers

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